UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1999-0204

September 16, 1999

Mr. Gary L. Larsen
Forest Supervisor
Mt. Hood National Forest
16400 Champion Way
Sandy, Oregon 97055-2799

Re: Section 7 Consultation on Effects of the Proposed Eightmile Creek Culvert Replacement Project on Middle Columbia River Steelhead, Mt. Hood National Forest, Wasco County, Oregon

Dear Mr. Larsen:

Thank you for your letter on May 13, 1999 requesting formal consultation regarding the potential effects of the Eightmile Creek culvert replacement project on Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). The accompanying Biological Assessment (BA) described the proposed action and the environmental baseline, and addressed the effects of that action on MCR steelhead. In the BA, the MHNF determined that the subject action is likely to adversely affect (LAA) MCR steelhead. The interagency Level 1 Team for the Middle Columbia portion of the MHNF met on April 29, 1999, to review the MHNF's effects determination and documentation of Aquatic Conservation Strategy (ACS) consistency for the subject action. The Team concurred on the ACS consistency analysis and effects determination.

MCR steelhead were listed as threatened under the Endangered Species Act (ESA) by the NMFS on March 25, 1999 (64 FR 14517). The NMFS proposed critical habitat for MCR steelhead on February 5, 1999 (64 FR 5740). The proposed culvert replacement is within proposed critical habitat for MCR steelhead.

This letter constitutes formal consultation and serves as a biological opinion for MCR steelhead. The objective of this biological opinion is to determine whether the proposed action is likely to jeopardize the continued existence of MCR steelhead or result in the destruction or adverse modification of their proposed critical habitat.

PROPOSED ACTION

The proposed action is to remove four existing culverts in the vicinity of the Eightmile Crossing Campground and replace them with bottomless pipe arch culverts with a span of approximately 12 feet. The existing culverts do not have the flow capacity to handle a 25 year flood event. The new culverts would be designed to improve fish passage and to accommodate an estimated 100 year peak flow, with a provision made for overtopping if debris loads cause the culvert capacity to be exceeded. Two of the culverts are on Eightmile Creek within the Eightmile Crossing Campground on the 4430150 Road, one culvert is on the 4430 Road crossing of Eightmile Creek just upstream of the campground at River Mile (RM) 29.9, and one is downstream at the 4440 Road crossing (RM 29.4). All construction would occur after July 15 and might extend into the fall, but would be completed within Oregon Department of Fish and Wildlife's (ODFW) in-water work period of July 1 to October 31 for the Fifteenmile Creek watershed. Water would be diverted around the sites during removal and replacement to minimize sediment transport downstream. Best management practices (e.g. silt fences, straw bales) will be used at the culvert replacement sites to minimize sediment transport to Eightmile Creek. Refueling of mechanized equipment will occur outside the riparian reserve. Installation of the larger replacement pipe arch culverts would require removal of several small (<12" Diameter Breast Height) alder trees at the 4430 Road site; and one small Douglas fir and three cedar trees at the lower 4430150 site. The trees are within the riparian areas of Eightmile Creek. Even though large woody debris densities are at or above properly functioning levels for all sections of Eightmile Creek, the felled trees will be left on site or placed in Eightmile Creek downstream from the culverts. Upon completion of the project, all disturbed areas resulting from the project will be planted with native vegetation including small conifers.

BIOLOGICAL INFORMATION AND CRITICAL HABITAT

The listing status and biological information for MCR steelhead are described in Busby et al. (1996). MCR steelhead are known to spawn and rear in Eightmile Creek downstream from the project sites. The majority of spawning occurs downstream from the MHNF boundary. Based on annual surveys conducted since 1990, very few steelhead redds (no more than 2 per year) have been found in Eightmile Creek within the MHNF boundary. The upper-most redds have been found at River Mile (RM) 24.5, which is approximately 4.9 miles downstream from the lowermost culvert replacement site. It is unknown whether juvenile steelhead ascend further upstream, but there are no known barriers to prevent them from doing so.

The BA states that the population of MCR steelhead found in the Fifteenmile Creek watershed, including Eightmile Creek, is notable for being the eastern-most stock of wild winter steelhead in the Columbia River basin. They are the only extant stock of wild winter steelhead in Oregon that originated from redband/inland rainbow trout.

EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA, as defined by 50 CFR Part 402 of the implementing regulations. NMFS must determine whether: (1) the action is likely to jeopardize the continued existence of the listed species; and (2) the action is likely to destroy or adversely modify critical habitat. NMFS' analysis involves the following steps: (A) define the biological requirements of the species; (B) evaluate the environmental baseline relative to the species' current status; (C) determine the effects of the proposed or continuing action on the species; (D) determine whether the species can be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action, the environmental baseline and any cumulative effects, and considering measures for survival and recovery specific to other life stages; and (E) identify reasonable and prudent alternatives to a proposed or continuing action that is likely to jeopardize the continued existence of the species.

In summary, for spawning and rearing habitat, NMFS' jeopardy analysis considers direct and indirect mortality of MCR steelhead attributable to the proposed action. The NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for productive spawning and rearing of MCR steelhead.

Biological Requirements

The biological requirements of MCR steelhead are discussed in Busby et al. (1996). For this consultation, NMFS finds that the biological requirements of MCR steelhead are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of MCR steelhead. The NMFS defines this "properly functioning" condition as the state in which all of the individual habitat factors operate together to provide a healthy aquatic ecosystem that meets the biological requirements of the fish species of interest. Individual environmental factors include water quality, habitat access, physical habitat elements, channel condition, and hydrology. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are necessary for the survival and recovery of MCR steelhead.

Environmental Baseline

The environmental baseline is an analysis of the effects of past and on-going human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). For the proposed Eightmile Creek culvert replacement project, the action area, therefore, includes the mainstem of Eightmile Creek at the uppermost culvert replacement site (RM 29.9) downstream to approximately RM 29.2.

The current population status and trends for MCR steelhead are described in Busby et al. (1996). Environmental baseline conditions within the action area were evaluated for the subject action at the project site and watershed scales. The evaluation was based on application of the "matrix of pathways and indicators" (MPI) described in "Making Endangered Species Act Effects Determinations for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species.

In the Eightmile Creek drainage (6^{th} field sub-watershed), 6 of the 18 habitat indicators in the MPI were rated as "properly functioning." These were: Nutrients, large wood, off-channel habitat, streambank condition, flooodplain connectivity, and riparian reserves. Eleven of the 18 were rated as "at risk." These were: Temperature, physical barriers, substrate, pool frequency, pool quality, refugia, width/depth ratio, peak/base flows, drainage network increase, and road density. Sediment was rated as not properly functioning. The environmental baseline conditions for each habitat indicator in the MPI are described in the BA and incorporated herein by reference.

ANALYSIS OF EFFECTS

Effects of Proposed Action

In the BA, the MPI (NMFS 1996) was used to predict the effects of the action on current aquatic conditions (the environmental baseline). This assessment method was designed to provide adequate information in a tabular form in BAs for NMFS to assess the effects of actions subject to consultation. The effects of the action are expressed in terms of the expected effect (restore, maintain, degrade) on each of 18 aquatic habitat factors in the action area, as described in the "checklist for documenting environmental baseline and effects of the action" (checklist) (NMFS 1996) completed for each action and watershed. The results of the completed checklist for the action provide a starting point for determining the overall effect of the action on the environmental baseline in the action area.

Removal of the existing culverts and installation of the pipe arches in Eightmile Creek will cause short-term increases in turbidity and potentially some localized increases in fine sediment. Sediment will likely not travel far, since instream work will be done during the low flow period after July 15. With the implementation of best management practices for erosion control, NMFS expects that the amount of additional fine sediment entering the stream channel as a result of this project will be negligible. This effect would be immeasurable at the 6^{th} field sub-watershed scale.

Felling of the small alder trees at the 4430 road site and the one Douglas fir and three cedar trees at the lower 4430150 road site would result in less than a 5% loss of shade at the sites. The riparian area in these locations contains high numbers of coniferous trees which provide adequate stream shade and sufficient future source of large wood. Over 90% of the riparian area along Eightmile Creek has good (as opposed to fair or poor) large woody debris recruitment potential.

Two of the MPI habitat parameters (physical barriers and refugia) would be restored by the proposed culvert replacements in Eightmile Creek. The existing culverts are at least a partial barriers to fish migration. Their replacement would restore fish passage and improve connectivity to potential MCR steelhead spawning and rearing habitat on the MHNF. There would be a short-term increase in sediment at the site during removal of the existing culverts and installation of the new ones. However, the effects of this short-term sediment increase would be negligible at the 6th field sub-watershed scale. The other 15 habitat parameters evaluated in the MPI would be maintained. The analysis of potential effects on each habitat indicator in the MPI are described in the BA and incorporated herein by reference.

Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area for this consultation includes the mainstem of Eightmile Creek at the uppermost culvert replacement site (RM 29.9) downstream to approximately RM 29.2. The MHNF identified no specific private or state actions, and NMFS is not aware of any, that are reasonably certain to occur in the future that would affect MCR steelhead or their habitat within the action area. The upper 11 miles of the 36-mile long Eightmile Creek are on the MHNF, with the lower 25 miles on private land.

Significant improvement in MCR steelhead reproductive success outside of MHNF lands is unlikely without changes in agricultural and other land and water management practices occurring within the non-Federal riparian areas in the Fifteenmile Creek 5th field watershed, of which Eightmile Creek is a part. Given that the MCR steelhead is listed as threatened and critical habitat has been proposed, NMFS assumes that non-Federal land owners will take steps to curtail or avoid land management practices that would result in the take of MCR steelhead. NMFS is not aware of any specific future actions which are reasonably certain to occur on non-Federal lands. Until changes in non-Federal land management practices are actually implemented, NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

CONCLUSIONS

The NMFS has determined that, when the effects of the Eightmile Creek culvert replacement project addressed in the biological opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of MCR steelhead. Additionally, the NMFS concludes that the subject actions would not cause adverse modification or destruction of proposed critical habitat for MCR steelhead. This conclusion was reached primarily because: (1) All in-water work would be completed during the Oregon Department of Fish and Wildlife's (ODFW) preferred in-water work period between July 1 and October 31 before adults return to spawn and after smolts have migrated to sea; (2) few, if any, juvenile MCR steelhead are

expected to be present at the project site during construction; (3) releases of sediment to downstream areas will be minimized due to timing of in-water work and implementation of erosion control measures identified in the BA; (4) potential for entry of hazardous materials to the stream channel would be minimized, as all refueling or servicing of mechanized equipment will occur outside riparian reserves; and (5) all newly disturbed riparian area would be replanted with native vegetation, including small conifers at selected sites. In reaching these conclusions, NMFS used the best scientific and commercial data available as documented herein and by the BA.

CONSERVATION RECOMMENDATION

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS has the following conservation recommendation regarding the action addressed in this Opinion:

The MHNF should monitor and report to NMFS the success of erosion control at the culvert replacement sites as well as the survival of native tree, shrub, and grass plantings on disturbed sites associated with the project.

REINITIATION OF CONSULTATION

Reinitiation of consultation is required if: (1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Biological Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, sheltering, and migration. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an

otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of the incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

Amount or Extent of Take

The NMFS anticipates that the subject action covered by this biological opinion has more than a negligible likelihood of resulting in incidental take of MCR steelhead . A minimal level of incidental take is expected to result from direct mortality or injury to MCR steelhead during removal of the existing culverts and replacement with new ones. The temporary increase in stream turbidity resulting from the action could result in temporarily reduced feeding efficiency for juvenile MCR steelhead. Direct mortality is expected to be minimal, because juvenile MCR steelhead are able to avoid instream construction activities. Effects from turbidity are also expected to be minimal because turbidity levels will quickly return to pre-construction levels once the project is completed. Because of the inherent biological characteristics of MCR steelhead, however, the likelihood of discovering take attributable to this action is very small. Effects of actions such as the Eightmile Creek culvert replacement addressed in this biological opinion are largely unquantifiable in the short term, and may not be measurable as a long-term effect on the species' habitat or population levels. Therefore, even though NMFS expects some incidental take to occur due to the action covered by this biological opinion, the best scientific and commercial data available do not enable NMFS to estimate a specific amount of incidental take of listed fish at any life stage.

Effect of the Take

In this Biological Opinion, NMFS has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead or to destroy or adversely modify proposed critical habitat.

Reasonable and Prudent Measures

The NMFS believes that the incidental take of MCR steelhead that is likely to occur as a result of the proposed Eightmile Creek culvert replacement project has been adequately minimized by project design. Therefore, reasonable and prudent measures to further reduce this incidental take are not necessary.

Please direct any questions regarding this consultation to Ron Lindland of my staff at (503-231-2315.

Sincerely,

William Stelle, Jr.
Regional Administrator

cc: Jeff Dillon, U.S. Fish and Wildlife Service
Jim Newton, Oregon Department of Fish and Wildlife

REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion in addition to the BA.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I. V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-27. August.

National Marine Fisheries Service (NMFS). 1997. Status Review Update for Deferred and Candidate ESUs of West Coast Steelhead. December.

National Marine Fisheries Service (NMFS). 1996. Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale. NMFS, Environmental and Technical Services Division, Habitat Conservation Branch, 525 NE Oregon Street, Portland, Oregon.

USDA Forest Service. 1994. Mile Creeks Watershed Analysis. Mt. Hood National Forest. Dufur, Oregon